

Identifying and managing problem drinkers

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SUMMARY

Problem drinking is far more common than severe alcohol dependence and is associated with considerable morbidity and health care costs. Whereas patients with alcohol dependence respond best to intensive treatment, one or more brief sessions of physician advice and counseling reduces alcohol consumption among problem drinkers. The two most useful tools to identify problem drinkers are the CAGE and the drinking problem question.

RÉSUMÉ

La surconsommation d'alcool est beaucoup plus fréquente que la dépendance sévère et elle s'accompagne d'une morbidité et de coûts considérables en termes de soins de santé. Alors que les patients souffrant de dépendance à l'alcool répondent favorablement à un traitement intensif, une ou plusieurs sessions brèves de conseils médicaux et de counselling permettent de réduire la consommation d'alcool chez les buveurs à risque. Les deux outils les plus utiles pour identifier les buveurs à risque sont le questionnaire CAGE et les questions touchant la consommation d'alcool.

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THIS ARTICLE DISCUSSES PRACTICAL guidelines for identifying and managing problem drinkers in family practice.

Problem drinking is defined as consuming more than the recommended safe limits and having one or more alcohol-related physical or social problems, but not having the features of severe alcohol dependence: physical dependence (tolerance and withdrawal); preoccupation with drinking; and severe social, psychological, or physical problems due to drinking.

Problem drinking is common; 11.3% of Canadian men are "heavy, frequent" drinkers, and 5.7% of male patients report an alcohol-related problem with friendships or social life.¹ Problem drinkers are estimated to outnumber alcohol-dependent patients by at least 4:1.²

Problem drinking vs alcohol dependence

While standard diagnostic manuals, such as the DSM-III-R, do not

categorize problem drinking and alcohol dependence separately, the distinction is of clinical importance because the two groups often require different treatment approaches.

While categorization of some cases will always be equivocal, several clinical and social characteristics help to differentiate problem drinkers from patients with severe dependence (*Table 1*). Physical dependence on alcohol, as evidenced by tolerance and withdrawal, is probably the most reliable clinical feature distinguishing the two.³ Patients who report tremor and sweats in the 12- to 24-hour period after drinking, the need to have a drink in the morning to "settle their nerves," or who experience withdrawal seizures or hallucinations in withdrawal are likely to be severely dependent on alcohol.

A recent study of problem drinkers³ illustrates another distinguishing feature. On average, problem drinkers in this study tended not to drink every day, and on one third of their drinking days their consumption was moderate (four drinks daily or less). They usually did not drink heavily for more than 1 day in a row, and their average consumption on heavy drinking days was only seven drinks.

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Table 1. Features distinguishing problem drinking from severe alcohol dependence

CLINICAL FEATURE	PROBLEM DRINKING	ALCOHOL DEPENDENCE
Withdrawal symptoms	No	Often
Amount consumed weekly	More than 12	More than 60
Drinks moderately (less than 4 daily)	Often	Rarely
Social consequences	None or mild	Often severe
Physical consequences	None or mild	Often severe
Socially stable	Usually	Often not
Neglects major responsibilities	No	Yes

Patients with severe alcohol dependence generally exhibit more stereotypical drinking patterns, consuming large amounts daily or almost daily for extended periods. This pattern can be interrupted by periods of abstinence of varying length (binge drinkers). While a reliable dividing line has not been established, someone consuming 50 drinks weekly is more likely to be severely dependent than someone consuming 20 to 30 drinks weekly.

Subjectively, problem drinkers do not perceive themselves as alcoholics. They think that they are in control of their drinking and can reduce their consumption if they choose. Problem drinkers are usually more socially stable than alcohol-dependent patients, and the social and health problems they experience are less severe. In contrast, alcohol-dependent patients often feel as though they are no longer able to stop drinking on their own. Repeated attempts at stopping or controlling use have failed. Their drinking often has caused serious social or health problems, such as loss of job or family, or cirrhosis of the liver.

The Alcohol Dependence Scale⁴ and the short alcohol dependence data (SADD) questionnaire⁵ can aid clinicians in distinguishing between problem drinking and severe dependence.

Effectiveness of brief interventions

At least 11 randomized trials to date have examined the effectiveness of brief interventions by physicians or nurses in reducing alcohol consumption among problem drinkers. The Medical Research Council trial⁶ randomized 656 male and 273 female heavy-drinking patients to receive either no intervention or one or more brief sessions with their own family physicians. After 1 year, male patients decreased their consumption by 14 drinks weekly, compared with a decrease of six drinks in the control group. Forty-five percent of the intervention group decreased their consumption to moderate levels, compared with 25% in the control group. Female patients showed similar, statistically significant declines in consumption.

The Oxford trial of 154 male patients in eight general practices⁷ used a design similar to that of the MRC trial. Oxford researchers found an average reduction of five drinks weekly in the intervention group compared with the control group.

The World Health Organization trial⁸ was a 6-month trial of a very brief (10-minute) intervention with 1356 male and 299 female heavy-drinking subjects in 12 different countries. Consumption among male subjects in the intervention group declined by seven standard drinks weekly relative to the control group. Female subjects did not show a statistically significant decline in alcohol consumption, but this fact could have been due to inadequate sample size. The generalizability of this trial to family physician interventions is uncertain, because most intervenors were nurses and psychiatrists.

Decreased morbidity was observed in three trials, including the longest trial to date, the Swedish Malmö study, a 5-year randomized trial of 473 men with elevated γ -glutamyltransferase (GGT) levels due to heavy drinking.⁹ Marked reductions in hospital stays (60%) and absenteeism (80%) were found in the group receiving regular physician advice compared with the group receiving minimal advice in the form of a letter. The study's major weakness is that baseline and postintervention alcohol consumption were

not recorded. Also, the intervention group received more nursing and medical visits than the control group, leaving open the possibility that cointervention could explain the improved health of the treatment group.

The Lund trial,¹⁰ a 1-year trial involving 85 subjects, also documented decreased absenteeism, but had the same design weakness as the Malmö trial. The *Hypertension* trial,¹¹ an 8-week trial of 41 heavy-drinking hypertensive males, demonstrated marked declines in alcohol consumption (20 drinks weekly) and significant declines in both systolic and diastolic blood pressure in the intervention group compared with the control group. Given its short duration, results of the trial must be interpreted cautiously.

Two trials had results that were difficult to interpret. In one study,¹² 156 male hospital patients on medical wards received a single counseling session from a nurse. At 1-year follow-up visits, the intervention group showed declines in their global problem scores, but alcohol consumption did not decline significantly. Whether this trial can be generalized to family physicians is uncertain. Baseline alcohol consumption was not recorded in the Tromsø trial (338 subjects),¹³ but the intervention group consumed an average of 12 fewer drinks weekly than the control group at 1-year follow up. However, declines in GGT levels from baseline to postintervention were observed in the intervention group.

Three trials had negative results. The DRAMS trial,¹⁴ a 6-month study of 78 male and 26 female patients in 16 general practices in Scotland, had negative results, which the authors attribute to inadequate sample size and noncompliance by the study physicians. The Oxford women's trial¹⁵ found no significant differences between subjects and controls, but only 72 women participated, far below the sample size requirements as determined by the authors' own power calculations. The 1-year Stockholm study¹⁶ found no significant changes in alcohol consumption or GGT, but only 83 subjects were enrolled in the trial.

Eight of the 11 randomized trials to date, including the three largest and most rigorously designed and conducted trials (the MRC,⁶

WHO,⁸ and Oxford⁷ trials), have demonstrated the effectiveness of brief interventions. This conclusion is supported by a recent meta-analysis of some 50 randomized trials of brief interventions done by physicians or nonmedical therapists.¹⁷

Safe drinking recommendations. The Royal College of Physicians and Surgeons of Canada recently recommended a maximum safe limit of two drinks daily,¹⁸ a recommendation consistent with those of other national and international organizations.¹⁹ Some organizations recommend lower limits for women (1 to 1½ drinks daily).²⁰ Women reach a higher blood alcohol concentration than men after consuming equivalent amounts of alcohol, due to smaller body size and a lower amount of alcohol dehydrogenase in the gastric mucosa.²¹ Women also develop alcoholic liver disease at lower levels of consumption than men.²²

Several prospective and case-control studies have shown that moderate drinkers have a lower total and cardiovascular mortality than abstainers or heavy drinkers.²³ The lower mortality is due largely to a reduction in mortality from coronary artery disease. Alcohol might also decrease mortality from ischemic stroke, but the evidence is equivocal. Alcohol is believed to exert its cardioprotective effect by increasing apolipoproteins A1 and A2 and by inhibiting platelet aggregation.²⁴ The level of consumption above which alcohol no longer confers cardiovascular protection has not been established with certainty.

Moderate and heavy drinkers have an increased risk of hemorrhagic stroke. Hypertension is one mediator of this risk; research has confirmed an independent association between alcohol consumption and both systolic and diastolic blood pressure elevation.^{25,26} No relationship has been convincingly demonstrated between blood pressure increases and consumption of less than three drinks daily.

The evidence for the health benefits of moderate drinking is far less compelling for women and younger men than it is for middle-aged men. Among younger men, total mortality increases with increasing alcohol consumption. A 15-year

prospective study of Swedish men aged 18 and 19²⁷ discovered that men consuming 251 to 400 g/wk (18 to 30 drinks) had double the mortality rate of men consuming less than 100 g. The greatest cause of death was violence, particularly suicide. Among women, several cohort studies have found a relationship between moderate alcohol consumption (one drink or less daily) and risk of breast cancer,^{28,29} although other studies have found no relationship.^{30,31} Further research is required before this relationship can be considered causal.³²

Intoxication. Acute intoxication puts patients at risk for accidents; for violence (both as perpetrator and victim); for suicide; for child abuse and neglect³³; and (more rarely) for cardiac arrhythmias, aspiration, and death from alcohol poisoning. To avoid intoxication, the recommended upper limit of consumption at any one sitting is three drinks, consumed at a rate of no greater than one drink hourly.

The legal limit is set at a blood alcohol level of 0.08 g/dL, although observational studies have shown impaired driving performance at levels as low as 0.03 g/dL for infrequent drinkers.³³ The chance of a fatal motor vehicle accident doubles at a blood alcohol level of 0.05 g/dL and quadruples at 0.08 g/dL.^{33,34} Depending on body size and tolerance, many men will attain blood alcohol levels of 0.03, 0.05, and 0.08 g/dL after consuming 1.5, 2.5, and 4 drinks in an hour, respectively. Women will attain similar blood alcohol levels with two thirds of that consumption.

For most conditions, a safe upper limit for alcohol consumption has yet to be determined with certainty, and a safe level for one medical condition or age group is not necessarily safe for another. Given currently available evidence, the Royal College recommendations for a safe upper limit of alcohol consumption appear reasonable and can serve as a useful guide for patients.¹⁸

Identifying problem drinkers

Research suggests that physicians are poor at identifying patients with alcohol problems.^{35,36}

For example, Moore et al³⁵ compared physician detection rates of alcoholism among hospitalized patients to rates obtained by screening and clinical interview. Detection rates were below 50% for most specialties. In a national survey of US adults,³⁶ the proportion of subjects with alcohol problems who reported receiving advice about their problem from a physician actually declined from 1967 to 1984.

Screening. Most physicians do not use screening maneuvers to detect alcohol problems in their practice. A survey of Canadian family physicians³⁷ found that only 32% were familiar with the CAGE questionnaire (a popular brief screening test), and only 4% had used it during the past month. Physicians continue to rely mainly on quantity and frequency questions about alcohol consumption, such as, "How much do you usually drink in a week?" While these questions are important, they are not as sensitive as other screening questions in detecting alcohol problems.

A variety of screening questionnaires have been developed to aid physicians and other caregivers in early identification of alcohol problems. Two such questionnaires, the CAGE³⁸ and the "problem" question,³⁹ are very brief (four questions and one question, respectively), allowing physicians to ask patients the questions directly without having to use paper or computer surveys.

A study in a London family practice clinic⁴⁰ determined that the CAGE had a sensitivity of 84%, a specificity of 95%, and a positive predictive value of 45% in identifying patients consuming more than four standard drinks daily. The CAGE is simple to remember and to score (two or more affirmative answers indicates a possible alcohol problem), and it can be incorporated into the clinical interview without requiring a written questionnaire. A positive score does not necessarily indicate a current alcohol problem, as the CAGE questions are retrospective. Physicians must interpret the CAGE in light of information on the amount and frequency of alcohol consumption.

Another screening method is simply to ask patients, "Have you ever had a drinking problem?" Cyr and Wartman³⁹ found that this question alone had a sensitivity of 70% in a family practice setting (using the 25-item Michigan Alcoholism Screening Test as the gold standard). When the question "When was your last drink?" was added, sensitivity increased to 92% ("within the past 24 hours" was considered a positive response). Further research is needed to validate this question as a screening instrument, but it holds considerable promise. It is even easier to remember than the CAGE, and fits into the clinical interview more easily. It could also be a more appropriate screen for problem drinkers than the CAGE, because problem drinkers generally do not require an "eyeopener" (indicating physical dependence) and sometimes have not had others notice and comment on their drinking.

The alcohol use disorders identification test (AUDIT), developed by the World Health Organization,⁴¹ is a 10-item multiple-choice questionnaire. One strength of the AUDIT is that it has been translated and validated in several different languages.

Alcohol consumption history. An alcohol consumption history should be taken for all new patients and repeated periodically. Contrary to popular opinion among physicians, patients generally provide accurate and reliable accounts of their alcohol consumption, unless they are intoxicated at the time of the interview.⁴² The most common approach to the alcohol history is the "quantity-frequency" method: asking patients how much and how often they drink. Cyr and Wartman³⁹ found that these two questions had a sensitivity of only 34% and 47%, respectively.

The sensitivity of the alcohol history can be enhanced by observing the points listed in Table 2.

Laboratory markers. Laboratory markers have an unacceptably low sensitivity and should not be relied on as the sole screening instrument for alcohol problems.⁴³ The most sensitive marker currently available, γ -glutamyltransferase, has a sensitivity of between 35% and 50% for detecting

consumption higher than four to six drinks daily in general practice.⁴³ γ -Glutamyltransferase can also be elevated by biliary tract disease, non-alcoholic liver disease, and microsomal enzyme inducers (such as phenytoin).⁴⁴

Another standard laboratory marker is an elevated mean cell volume (usually in the absence of anemia), caused by alcohol's effects on bone marrow erythroblasts. An elevated mean cell volume has a sensitivity of between 30% and 50% for detecting heavy alcohol consumption.

Table 2. Ways to increase sensitivity of alcohol consumption histories

Ask all patients.

Elicit a specific weekly consumption from patients ("I just drink socially" means little because the patient's social group could consist of heavy drinkers).

Convert the patient's response into standard drinks containing equivalent amounts of ethanol (13.6 g): 360 mL (12 oz) of beer, 150 mL (5 oz) of wine, or 45 mL (1½ oz) of spirits.

Ask about patients' maximum consumption at one sitting in the previous month (when patients are asked only about their average or typical weekly consumption, they often exclude sporadic heavy drinking days).

If patients give vague responses:

- Ask about their previous week's drinking (this is the week that is most precisely remembered).
- Present patients with a range of consumption: "Would you say your drinking is more on the order of 12 drinks weekly or 30 drinks weekly?"

Clinical presentations. Physicians need to be alert to clinical presentations associated with heavy drinking. The most common presentations in family practice are trauma, gastrointestinal symptoms, hypertension, depression, social and family dysfunction, and sexual problems.^{45,46}

Assessment

Once an alcohol problem has been identified, physicians should conduct a medical assessment in order to identify complications such as gastritis, alcoholic liver disease, hypertension, and (in older patients) peripheral neuropathy. A brief

psychiatric history should also be conducted, to determine whether underlying psychiatric disorders (such as depression or panic disorder) are contributing to alcohol use.

Physicians should also ask about other psychoactive drug use, both prescription and illicit. Lifestyle issues, such as smoking and sexual practices, and safety concerns, such as domestic violence, need to be addressed. Physicians should enquire about triggers to patients' alcohol use and the effects of patients' drinking on relationships, work performance, and financial and legal status. Early or subtle effects should be elicited, such as a lack of energy after a heavy night of drinking.

Motivational interviewing

The manner in which physicians broach patients' drinking can influence patients' acceptance of the diagnosis and the need for change. Motivational interviewing holds promise as a way of promoting behavioural change.^{47,48}

Motivational interviewing is based on two premises. The first is that offering direct advice or labeling the patient's drinking as a problem leads to increased resistance and defensiveness, preventing behavioural change. Labels with strong negative connotations, such as "alcoholic," are especially likely to be counterproductive with problem drinkers.

The second premise is that drinkers are in varying stages of readiness to change,⁴⁹ and physicians must begin at the stage drinkers have reached and gently attempt to move them to the next stage. Starting the interview from the wrong stage, or pushing patients too quickly, can lead to increased resistance. In the first stage, precontemplation, patients do not recognize that they have an alcohol problem. Patients in this stage should be asked neutral and nonthreatening questions, such as how alcohol fits into their lives or how their drinking affects their health. These questions can lead patients to begin thinking about the adverse effects of alcohol on their lives.

In the second stage, contemplation, patients recognize a problem but are ambivalent about the need for change. For example, they might

feel that their drinking, despite its problems, is a valuable coping strategy or an important part of their social life. Physicians should encourage these patients to elaborate on their concerns about their drinking, while at the same time inquiring about its perceived benefits. Such discussions can lead patients to convince themselves that the adverse consequences of drinking outweigh the benefits.

In the third stage, action, patients have resolved their ambivalence and are committed to change. Physicians should discuss treatment options, while emphasizing that patients have personal control over treatment decisions.

Such discussions can take place in short segments over time. Flexibility, patience, and a gentle, sympathetic approach are essential. Reflective listening skills should be used, in which physicians rephrase statements made by patients, or attempt to summarize patients' feelings. An example of a reflective statement is, "What I hear you saying is that you get tense when you have to work late, and this makes you want to drop off at the bar rather than going home." Such statements demonstrate that physicians understand and appreciate patients' perspectives (while not necessarily agreeing with them.)

Treatment protocol

In addition to these general guidelines for motivational interviewing, physicians can assist their patients by employing a treatment protocol. The following protocol is similar to interventions used in the randomized trials described above.³⁻¹³ The protocol can be delivered in a few brief office sessions. Special expertise in alcohol counseling is unnecessary; all that is required is a knowledge of the recommended safe limits of consumption and the health effects of alcohol. Physicians provide some health education and a few simple behavioural tips to enable patients to limit consumption.

Step 1. Review safe drinking guidelines.

While the general public is advised to consume no more than two drinks daily, problem drinkers prefer a higher limit; a daily maximum of three

drinks and a weekly maximum of 12 drinks is recommended as a prudent compromise.

Step 2. Show patients where their consumption fits within Canadian norms.

Some patients have trouble accepting that they are drinking at hazardous levels, because they do not drink more heavily than their peers. Table 3¹ can help physicians show patients how their alcohol consumption compares with Canadian norms.

Step 3. Offer information on the health effects of alcohol.

The message should be tailored to patients' age and health status. A young man might find a discussion on the link between drinking and depression, fatigue, and insomnia more relevant than a discussion on alcoholic liver disease.

Step 4. Have patients commit to a drinking goal.

The patient's drinking goal (reduced drinking or abstinence) should be determined by the patient, with some guidance from the physician. Patient-determined goals are more likely to generate a sense of ownership and commitment than physician-determined goals, and goal self-selection is preferred by problem drinkers.⁵⁰ The goals should be carefully thought out, realistic, and specific. The patient should write the goals down and keep a copy available for review.

Abstinence or very limited drinking is recommended in certain clinical situations, such as cirrhosis of the liver or active alcoholic or viral hepatitis, active peptic ulcer or gastritis, pregnancy, use of psychoactive medications, medical conditions that can be exacerbated by alcohol (such as diabetes or seizure disorder), and the use of machinery.²⁰

Ideally, the goal should not exceed the recommended safe drinking guidelines. Patients consuming considerably more alcohol than recommended might find it easier to taper; for example if they are consuming 50 drinks weekly, they could decrease to 30, 20, and then 12.

The drinking goal should specify the maximum number of drinks to be consumed on a

Table 3. Weekly alcohol consumption of Canadian adults during 1989

DRINKS EACH WEEK*	MEN (%)	WOMEN (%)
0	38.0	56.7
1-7	39.5	36.8
8-14	13.0	4.7
15-21	5.0	1.2
22-27	1.7	<1.0
28 or more	2.9	<1.0

Data from the National Alcohol and Other Drugs Survey.¹

** One standard drink equals one 360-mL bottle of beer, 150 mL of wine, or 45 mL of liquor.*

single occasion, the frequency of drinking, and the situations in which drinking will take place. In general, patients should not drink at all in high-risk situations (those in which excess drinking is most likely to occur). For example, a patient might choose to drink three drinks a night, 3 days weekly, and only at home, not at the bar.

Occasionally, physicians disagree with patients' drinking goals. A patient might choose a goal well above the recommended safe limit or have a medical contraindication to alcohol consumption, yet intend to continue drinking. Physicians should candidly discuss this disagreement with patients and document the discussion in the chart. In the end, however, it is better to know what patients actually intend to do than to intimidate them into declaring goals they have no intention of pursuing.

If a reduced drinking goal is chosen, physicians might consider recommending an initial period of abstinence of 2 to 4 weeks. This serves two purposes: it helps to determine whether patients really are candidates for a reduced drinking strategy. If they cannot abstain for 2 weeks, they could be more severely dependent than previously assumed. During the period of abstinence, patients often discover important information about high-risk situations for heavy drinking and strategies for reducing consumption.

Table 4. Strategies to avoid intoxication

On a drinking day, drink no more than one standard drink per hour, and no more than three drinks maximum.
Start drinking later in the evening.
Sip drinks, don't gulp.
Avoid drinking on an empty stomach.
Dilute drinks with mixer. Carbonated mixers speed the absorption of alcohol and should be avoided if possible.
Alternate alcoholic with non-alcoholic drinks.

Step 5. Review strategies to avoid intoxication. The simple behavioural strategies listed in Table 4 are designed to reduce patients' rate of alcohol consumption and avoid frank intoxication.

Step 6. Advise patients about drinking and driving. Patients who consume one standard drink hourly to a maximum of three will be under the legal limit for blood alcohol level, but they should be advised that any alcohol consumption can impair their ability to drive. While patients might not feel intoxicated, they will not perform as well in complex driving situations requiring quick reactions.^{33,51}

Step 7. Give patients self-help literature. Well-written patient booklets or reading packages have been developed by the College of Family Physicians of Canada,⁵² the World Health Organization,⁵³ and the Addiction Research Foundation.³ The booklets reinforce steps 1 through 5 by providing patients with information on safe drinking levels and the health effects of alcohol, tips on how to cut down, and drinking diaries. In addition, the booklets employ cognitive-motivational strategies to encourage patient change. For example, in the "homework assignments" given to patients attending the Guided Self-Change Clinic at the Addiction Research Foundation, patients are asked to consider the benefits and costs of their drinking, to outline reasons they want to change their drinking patterns, to identify the triggers and the consequences of their drinking, to describe high-risk drinking

situations, and to develop action plans for dealing with these high-risk situations.

The action plans patients develop can be surprisingly detailed, practical, and creative. They can involve simple adjustments (having dinner earlier to avoid the predinner drink), changes in friendships or leisure activities, or changes in ways of coping with emotional triggers to drinking. For example, patients who drink alone at home because of boredom and anxiety might develop action plans that commit them to social activities away from home.

Step 8. Have patients record consumption. Self-monitoring through a daily recording sheet or drink diary promotes behavioural change by making patients more conscious of their drinking habits, by providing positive feedback for reduced drinking, and by allowing them to analyze their drinking patterns and triggers.⁵¹

Step 9. Order laboratory tests. While laboratory tests for markers of alcohol consumption at baseline and follow up are not good screening instruments, they can be an important tool for monitoring treatment success and detecting relapse. They also help to convince patients that they are drinking at hazardous levels. Patients whose γ -glutamyltransferase level decreases over time often feel pride at this evidence of their progress.

γ -Glutamyltransferase has a half-life of about 2 weeks, and usually returns to normal within 2 to 6 weeks of abstinence,^{55,56} although its half-life is prolonged in patients with severe alcoholic liver disease.⁴⁴ Some caution is needed in interpreting γ -glutamyltransferase in patients who continue to drink, however, as γ -glutamyltransferase shows marked intra-individual and inter-individual variation. In a 2-year study of 137 problem drinkers,⁵⁷ γ -glutamyltransferase changes paralleled changes in self-reported consumption in only 41% of cases. γ -Glutamyltransferase was somewhat more sensitive in detecting self-reported decreases than increases in consumption. A cross-sectional study of 127 problem drinkers⁵⁸ found little correlation between alcohol consumption, the severity of alcohol dependence, and γ -glutamyltransferase.

Step 10. Follow up regularly. Regularly scheduled office visits or phone calls help patients stay on track. Physicians should contact patients if appointments are missed. Patients appreciate these contacts as an indication of physicians' concern. Research indicates that follow-up contact results in better treatment retention rates.⁵⁹

Step 11. Refer patients for further treatment when appropriate. If, after a fair trial, there has been no substantial reduction in drinking, referral for more intensive treatment should be considered. Also, referral to other services might be indicated, such as marital counseling, relaxation therapy, or psychotherapy.

Conclusion

Problem drinking is far more common than severe alcohol dependence, and is associated with considerable morbidity and health care costs. Family physicians are in an ideal position to identify and treat problem drinkers, and brief interventions by family physicians have been shown to be effective. Given the lack of formal treatment services for problem drinkers and the reluctance of such patients to seek formal treatment, family physicians are increasingly being viewed as having great responsibility to provide brief interventions.

Problem drinkers can be identified through simple screening questions, such as the CAGE and the drinking problem question; taking a proper alcohol history; and being alert to common presentations of problem drinking, such as trauma, hypertension, gastrointestinal complaints, and psychosocial problems. Once a problem drinker has been identified, there is ample evidence of the positive impact physicians can have by employing motivational interviewing techniques and a structured treatment protocol similar to that outlined above. ■

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AXID® Lilly – Nizatidine Histamine H₂ Receptor Antagonist

Action: Nizatidine is a competitive, reversible inhibitor of the histamine H₂ receptor of gastric-acid secreting cells. Nizatidine is not an anticholinergic agent. It inhibits nocturnal gastric-acid secretion as well as gastric-acid secretion stimulated by food, caffeine, betazole and pentagastrin. Pepsin output is reduced in proportion to the reduced volume of gastric secretions. Nizatidine has little or no effect on basal serum gastrin or food induced hypergastrinemia. In man nizatidine is absorbed rapidly, peak plasma concentrations occur from 0.5 to 3 hours after an oral dose. Approximately 90% of an oral dose of nizatidine is excreted in the urine within 12 hours, with about 60% as unchanged drug. The elimination half-life is one to two hours and the systemic plasma clearance is about 50 L/hour. Antacids consisting of aluminum and magnesium hydroxides with simethicone decrease absorption of nizatidine by about 10%. With food the AUC and C_{max} increase by approximately 10%. Renal impairment significantly prolongs the half-life and decreases the clearance of nizatidine.

Indications and Usage: AXID (nizatidine) is indicated in the treatment of conditions where a controlled reduction of gastric acid secretion is required such as, for ulcer healing and/or pain relief: acute duodenal ulcer, acute benign gastric ulcer, gastroesophageal reflux disease, and prophylactic use in duodenal ulcer.

Contraindications: AXID (nizatidine) is contraindicated for patients with known hypersensitivity to the drug. Because cross sensitivity in this class of compounds has been observed, H₂-receptor antagonists, including AXID, should not be administered to individuals with a history of previous hypersensitivity to other agents.

Precautions: *Use in Gastric Ulcer:* Where gastric ulcer is suspected the possibility of malignancy should be excluded before therapy with AXID (nizatidine) is instituted. *Use in Pregnancy and Lactation:* The safety of AXID during pregnancy has not been established. Reproduction studies performed in rats and rabbits at doses up to 300 times the human dose have revealed no evidence of impaired fertility or teratogenicity. If the administration of AXID is considered to be necessary, its use requires that the potential benefits be weighed against possible hazards to the patient and to the fetus. Nizatidine is secreted in human breast milk in proportion to maternal plasma concentrations (<0.1%), and caution should be exercised when AXID is administered to nursing mothers. *Use in Impaired Renal Function:* As nizatidine is excreted via the kidney, dosage should be adjusted in patients with moderately or severely impaired renal function (see Dosage and Administration). *Use in Hepatic Dysfunction:* Nizatidine is partially metabolized in the liver; however, in patients with mild to moderate hepatic dysfunction, disposition of nizatidine is similar to that of normal subjects. *Use in Elderly Patients:* Ulcer healing rates in elderly patients are similar to those in younger age groups. The incidence rates of adverse events and laboratory test abnormalities are also similar to those seen in other age groups. Age alone is not an important factor in determining the disposition of nizatidine. However, elderly patients may have reduced renal function (see Dosage and Administration). *Pediatric Use:* The safety and effectiveness of nizatidine in children has not been established. *Laboratory Tests:* False-positive tests for urobilinogen with Multistix® may occur during therapy with nizatidine. *Drug Interactions:* No interactions have been observed between AXID and theophylline, chloridazepoxide, lorazepam, lidocaine, phenytoin, warfarin, aminophylline, diazepam, and metoprolol. AXID does not inhibit the cytochrome P-450-linked drug-metabolizing enzyme system; therefore, drug interactions mediated by inhibition of hepatic metabolism are not expected to occur. In patients given very high doses (3,900 mg) of ASA daily, increases in serum salicylate levels were seen when nizatidine, 150 mg b.i.d., was administered concurrently.

Adverse Reactions: Clinical trials of nizatidine included almost 5,000 patients given nizatidine in studies of varying durations. North American placebo-controlled trials included over 1,900 patients given nizatidine and over 1,300 given placebo. Among the more common adverse events in these placebo-controlled trials, sweating (1% vs. 0.2%), urticaria (0.5% vs. less than 0.01%), and somnolence (2.4% vs. 1.3%) were significantly more common in the nizatidine group. A variety of less common events were also reported; it was not possible to determine whether these were caused by nizatidine. *Hepatic:* Hepatocellular injury, evidenced by elevated liver enzyme tests (SGOT[AST], SGPT[ALT], or alkaline phosphatase), occurred in some patients possibly or probably related to nizatidine. In some cases there was marked elevation of SGOT, SGPT enzymes (greater than 500 IU/L) and in a single instance SGPT was greater than 2,000 IU/L. The overall rate of occurrences of elevated liver enzymes and elevations to 3 times the upper limit of

normal, however, did not significantly differ from the rate of liver enzyme abnormalities in placebo treated patients. Hepatitis and jaundice have been reported. All abnormalities were reversible after discontinuation of AXID. **Cardiovascular:** In clinical pharmacology studies, short episodes of asymptomatic ventricular tachycardia occurred in 2 individuals administered nizatidine and in 3 untreated subjects. **Central Nervous System:** Rare cases of reversible mental confusion have been reported. **Endocrine:** Clinical pharmacology studies and controlled clinical trials showed no evidence of antiandrogenic activity due to AXID. Impotence and decreased libido were reported with equal frequency by patients who received AXID and by those given placebo. Rare reports of gynecomastia occurred. **Hematologic:** Fatal thrombocytopenia was reported in a patient who was treated with AXID and another H₂-receptor antagonist. On previous occasions, this patient had experienced thrombocytopenia while taking other drugs. Rare cases of thrombocytopenic purpura have been reported. **Integumental:** Sweating and urticaria were reported significantly more frequently in nizatidine than in placebo patients. Rash and exfoliative dermatitis were also reported. **Hypersensitivity:** As with other H₂-receptor antagonists, rare cases of anaphylaxis following administration of nizatidine have been reported. Because cross sensitivity in this class of compounds has been observed, H₂-receptor antagonists should not be administered to individuals with a history of previous hypersensitivity to these agents. Rare episodes of hypersensitivity reactions (eg. bronchospasm, laryngeal edema, rash and eosinophilia) have been reported. **Other:** Hyperuricemia unassociated with gout or nephrolithiasis was reported. Eosinophilia, fever and nausea related to nizatidine administration have been reported.

Symptoms and Treatment of Overdose: There is little clinical experience with deliberate overdosage of AXID (nizatidine) in humans. Test animals that received large doses of nizatidine have exhibited cholinergic-type effects, including lacrimation, salivation, emesis, miosis, and diarrhea. Should overdosage occur, use of activated charcoal, emesis, or lavage should be considered along with clinical monitoring and supportive therapy. Renal dialysis does not substantially increase clearance of nizatidine due to its large volume of distribution.

Dosage and Administration: *Duodenal or Gastric Ulcer:* One 300 mg capsule or two 150 mg capsules once daily at bedtime. Alternatively 150 mg twice daily may be used. Healing occurs within 4 weeks in most cases of duodenal ulcer; but if healing is not documented or has not occurred, therapy should be given for 8 weeks. *Maintenance Therapy in Duodenal Ulcer:* One 150 mg capsule once daily at bedtime for 6 to 12 months depending on the severity of the condition. *Gastroesophageal Reflux Disease:* One 150 mg capsule twice daily for the treatment of erosions, ulcerations, and associated heartburn. Antacids may be given concomitantly if needed.

How Supplied: AXID (nizatidine) *Pulvules* 3144 150 mg, pale yellow and dark yellow. Bottles of 100. AXID (nizatidine) *Pulvules* 3145 300 mg, pale yellow and brown. Bottles of 100. AXID is a Schedule F drug and cannot be obtained without a written order from a licensed practitioner.

Drug Adjustment in Renal Impairment:

Renal Function	Creatinine Clearance (mL/min)	Dosage	
		Acute	Maintenance
Normal	>50	300 mg/day	150 mg/day
Moderate Impairment	20-50	150 mg/day	150 mg/2nd day
Severe Impairment	<20	150 mg/2nd day	150 mg/3rd day

Revised November, 1992

Product monograph available on request.

References: 1. Axid Product Monograph. 2. Ranitidine Product Monograph. 3. Cimetidine Product Monograph. 4. Famotidine Product Monograph. 5. Heartburn Survey. Data on file. Lilly Research Laboratories, 1991. 6. Cloud M, Offen W. Digestive Diseases and Sciences 1992; 37(6): 865-874. 7. Cloud M, Offen W. Amer J Gastroenterol 1991; 86(12): 1735-1742.

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